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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/590,933

08/28/2006

Anton Esser

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2785

22850

7590

03/15/2012

OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

CORDRAY, DENNIS R

ART UNIT

PAPER NUMBER

1741

NOTIFICATION DATE

DELIVERY MODE

03/15/2012

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/590,933	ESSER ET AL.	
	Examiner	Art Unit	
	DENNIS CORDRAY	1741	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 January 2012.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 5) ☒ Claim(s) 1-15, 17 and 18 is/are pending in the application.
- 5a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 6) ☐ Claim(s) ____ is/are allowed.
- 7) ☒ Claim(s) 1-5, 7-14, 17 and 18 is/are rejected.
- 8) ☒ Claim(s) 6 and 15 is/are objected to.
- 9) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

A request for continued examination under 37 CFR 1.114 was filed in this application after a decision by the Board of Patent Appeals and Interferences, but before the filing of a Notice of Appeal to the Court of Appeals for the Federal Circuit or the commencement of a civil action. Since this application is eligible for continued examination under 37 CFR 1.114 and the fee set forth in 37 CFR 1.17(e) has been timely paid, the appeal has been withdrawn pursuant to 37 CFR 1.114 and prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on 1/26/2012 has been entered.

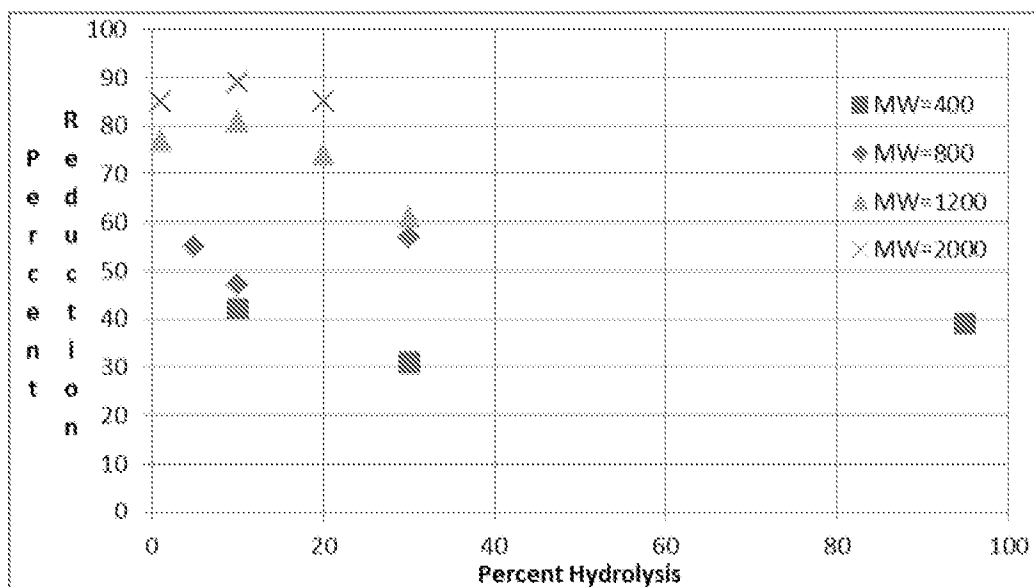
Examiner's Note

The rejection of Claims 1, 4-10 and 13-18 under 35 U.S.C. 103(a) as being unpatentable over Burke in view of Hund et al has been withdrawn for reasons cited in the Decision on Appeal from the BPAI on 12/2/2011.

Declaration

Applicant's Second Declaration under 37 CFR 1.132, filed 1/26/2012, has been fully considered and is persuasive with respect to the rejection of Claims 1-19 under 35 U.S.C. 103(a) as being unpatentable over Auhorn et al in view of Burkert et al. The data provided, which include data from the previous Declaration submitted 12/11/2009, demonstrate that polymers formed by partial hydrolysis of N-vinylformamide homopolymers to provide from 1-20 mole-% vinylamine units and having molecular

weights in the claimed range, when added to a high consistency paper stock containing coated broke, provide a reduction of pitch particles that is greater than would be predicted or expected by one of ordinary skill in the art as compared with similar polymers that are greater than 20% hydrolyzed and/or have molecular weight greater than the claimed range. A plot of the data is provided below.



The rejection of Claims 1-19 under 35 U.S.C. 103(a) as being unpatentable over Auhorn et al in view of Burkert et al has been withdrawn because Burkert et al only discloses partially hydrolyzed homopolymers of N-vinylformamide.

Response to Arguments

Applicant's arguments, filed 1/26/2012, are directed to the evidence supplied in the Second Declaration, which has been discussed above. The rejection of Claims 1-19 under 35 U.S.C. 103(a) over Auhorn et al in view of Burkert et al has been withdrawn.

Regarding the data provided in the Declarations, note that the vinylamine polymers used were partially hydrolyzed homopolymers of N-vinylformamide. The instant claims embody any polymers comprising vinylamine units and hydrolyzed homo- or copolymers of N-vinylcarboxamide. In Claim 1, the claimed polymers can comprise any relative amounts of other copolymerizable monomers in addition to vinylamine and, in Claim 9, any relative amounts of other copolymerizable monomers in addition to N-vinylcarboxamide and vinylamine, subject only to the claimed degree of hydrolysis and molecular weight of at least 1,000,000. Applicant's representative has argued in an oral hearing held before the BPAI on October 26, 2011 that the molecular weight and the polymer together are important, that a prior art polymer having a molecular weight in the claimed range is not sufficient if it is a different polymer, and that "we don't know, that if you picked an entirely different polymer, maybe or maybe not you would get similar results with different molecular weights, or molar masses." (see p 7 top paragraph of the oral hearing summary, mailed 12/1/2011). Thus Applicant clearly admits that it is unknown, if a different polymer were used but having the same molecular weight, that the same results would ensue. Vinylamine containing polymers as claimed that comprise monomers other than N-vinylcarboxamide and vinylamine are different polymers from those used in the showing of unexpected results and, by Applicant's own admission, do not necessarily provide the same results as a the polymers used in the showing. In addition, the data provided in the Second Declaration do not compare addition of the vinylamine polymer to high consistency stock vs. any other point of addition in the papermaking process, thus do not show any unexpected results due to

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the point of addition of the polymer. For these reasons, the showing is not commensurate in scope with, and cannot show unexpected results for, the invention as claimed.

The Double Patenting rejection over copending application 11/719826 has been withdrawn. Claims 1-4 and 11-19 of the copending application do not require a polymer having vinylamine units, and Claims 5-10 do not require addition to the high consistency stock or the claimed molecular weight and degree of hydrolysis. Auhorn et al is directed to increased retention and not paper of high dry strength as claimed in 11/719826, thus one of ordinary skill would find no motivation from Auhorn et al to alter the claims of 11/719826 to include currently claimed features and expect an improvement in dry strength.

The Double Patenting rejection over application 11/574677, now U.S. Patent No. 8029647 has been changed from a provisional obviousness-type double patenting rejection to an obviousness-type double patenting rejection over U.S. Patent No. 8029647 in view of Kulick et al and Smook, which are discussed in the current rejections.

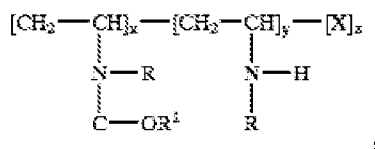
The Double Patenting rejection over application 12/065688, now U.S. Patent No. 7918965 has been changed from a provisional obviousness-type double patenting rejection to an obviousness-type double patenting rejection over U.S. Patent No. 7918965 in view of Kulick et al and Smook.

In addition, new grounds of rejection are presented over newly found prior art.

Claim Rejections - 35 USC § 103

Claims 1-5, 7-9, 11-14 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kulick et al (US 2003/0192664) in view of Langley et al (4753710) and Smook (Handbook for Pulp and Paper Technologists) and as evidenced by Auhorn et al (US 6083348).

Claims 1-5, 9 and 11-14: Kulick et al discloses addition to a cellulosic papermaking suspension of (1) crosslinked, ionic, polymeric microbeads and (2) a vinylamine containing polymer (reads on metering in at least one polymer having vinylamine units). Kulick et al discloses suitable polymers (2) having recurring units of the formula



Where each R or R¹, individually, is H or C₁-C₃ alkyl, X is the polymerization of a copolymerizable monomer or hydrolyzed derivative thereof or mixtures of said monomers, x and z are, individually, numerals from about 0 to about 99 and y is a numeral from about 0.5 to about 100. Vinylamide monomers useful in producing the vinylamide and vinylamine units in the polymer include N-vinylformamide. Polymers containing vinylamine units are produced by homo- or copolymerization of N-vinylformamide and subsequent hydrolysis of the polymers (see Auhorn et al, col 2, lines 53-57 if evidence is needed). The vinylamine polymers have a molecular weight preferably from about 50,000 to about 5 million (Abs, p 1, par 15; p 3, pars 28, 29, 32

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and 37). The disclosed polymers overlay the claimed polymers comprising vinylamine units.

The preferred sequence of addition is to add the vinylamine polymer first, followed by the microbeads. Addition of one component to the thick stock is disclosed (p 4, pars 50 and 52). Although not explicitly disclosed, one of ordinary skill in the art would have found it obvious that thick stock addition of the vinylamine polymer is embodied in the cited paragraphs.

Kulick et al discloses that the pulps used can comprise recycled pulp, such as office waste, magazine paper, non-deinked waste, de-inked waste, etc. Waste paper comprises contaminants such as hot melts, latex, pressure sensitives, waxes, etc, that can stick to and foul equipment, and cause defects in products (see Smook, pp 212-214, especially Table 14-2, Contaminant Removal for evidence). The contaminants are thus interfering substances.

Kulick et al does not disclose the claimed steps of diluting with water the high consistency stock to low consistency stock, and draining the low consistency stock.

Langley et al teaches that, in conventional papermaking, the thin stock that is drained to form the sheet is often made by diluting a thick stock by recycled white water (col 6, lines 49-56). The thin stock typically has a fiber content of 0.1 to 2% (col 8, lines 35-39). In an example, a sample of thick stock obtained from a mill producing publishing grade papers had a consistency of 3.5% (col 18, lines 10-14).

Smook teaches that the final furnish in the machine chest of a typical papermaking process has a consistency of 2.6-2.8%. The furnish is combined with

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white water in the paper machine approach system to reduce the consistency to typically 1% or below (p 208, last paragraph).

The art of Kulick et al, Langley et al, Smook and the instant invention is analogous as pertaining to the preparation of stock used in papermaking. It would have been obvious to one of ordinary skill in the art to dilute the high consistency stock having the claimed consistency with water to low consistency stock having the claimed consistency, and drain the low consistency stock in the process of Kulick et al in view of Langley et al and Smook to make paper as a typical papermaking process.

Claim 7: The vinylamine polymer and microbeads are retention and drainage additives (Abs; p 1, par 1). Thin stock addition of the microbeads is disclosed (p 4, par 52). Since Kulick et al discloses that one component can be added to the thick stock, one of ordinary skill in the art would have found it obvious to add the other component to the thin stock.

Alternatively, Kulick et al teaches that addition points may be determined by practicality and the need to place more or less shear on the treated system to ensure good formation, thus reveals that the addition points are result effective variables. It would have been obvious to one of ordinary skill in the art to add of the vinylamine polymer to the thick stock and the microbeads to the thin stock and to have a reasonable expectation of success.

Claims 8 and 17: Kulick et al discloses that the vinylamine polymers are preferably added in the amount from about 0.1 to about 10 lb/ton, or from about 0.01 to about 1%, based on the dry weight of the materials (p 3, par 39).

Claims 10 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kulick et al in view of Langley et al and Smook and further in view of Harvey et al (US 2002/0100564).

The disclosures of Kulick et al, Langley et al and Smook are used as above. Kulick et al, Langley et al and Smook do not disclose that the recycled paper comprises coated broke.

Harvey et al teaches that one source of recycled paper stock is coated broke (p 1, par 7).

The art of Kulick et al, Langley et al, Smook, Harvey et al and the instant invention is analogous as pertaining to using recycled paper in the stock used to produce new paper. It would have been obvious to one of ordinary skill in the art to use coated broke in the process of Kulick et al in view of Langley et al and Smook and further in view of Harvey et al as a typical source of recycled paper.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct

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from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-5, 8, 9, 11-14 and 17 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 3, 4 and 5 of U.S. Patent No. 7918965 in view of Kulick et al and Smook. The claims of the patent embody draining a stock on a wire with sheet formation in the presence of a retention aid, where the retention aid comprises a 0.5 – 100 mol-% hydrolyzed polymer comprising vinylamine units and having a molecular weight of at least 1,000,000. The

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claims do not require adding the polymer to a high consistency stock and diluting the high consistency stock to a low consistency stock. Kulick et al discloses adding a polyvinylamine polymer to high consistency stock that contains recycled paper and thus interfering substances, and Smook teaches that typical papermaking steps include diluting high consistency stock having the claimed consistency with water to form low consistency stock having the claimed consistency. It would have been obvious to one of ordinary skill in the art to modify the claimed process to add the polymer comprising vinylamine units to the claimed high consistency stock containing interfering substances and diluting the high consistency stock to the claimed low consistency stock as disclosed by Kulick et al and Smook.

Claims 1-5, 9 and 11-14 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 5 and 6 of U.S. Patent No. 8029647 in view of Kulick et al and Smook. The claims of the patent require draining a stock on a wire with sheet formation in the presence of a retention aid, where the retention aid comprises a 0.5 – 50% hydrolyzed homopolymer of N-vinylformamide having a molecular weight of at least 1,200,000. The claims do not require adding the polymer to a high consistency stock and diluting the high consistency stock to a low consistency stock. Kulick et al and Smook are used as above. It would have been obvious to one of ordinary skill in the art to modify the claimed process to add the polymer comprising vinylamine units to the claimed high consistency stock containing

interfering substances and diluting the high consistency stock to the claimed low consistency stock as disclosed by Kulick et al and Smook.

Allowable Subject Matter

Claims 6 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The data provided in the Second Declaration submitted 1/26/2012, demonstrate that polymers formed by partial hydrolysis of N-vinylformamide homopolymers to provide from 1-20 mole-% vinylamine units and having molecular weights in the claimed range, when added to a high consistency paper stock containing coated broke, provide a reduction of pitch particles that is greater than would be predicted or expected by one of ordinary skill in the art as compared with similar polymers that are greater than 20% hydrolyzed and/or have molecular weight greater than the claimed range. Adding the hydrolyzed homopolymers of N-vinylformamide as claimed would not have been obvious to one of ordinary skill in the art with an expectation of obtaining the improved results shown.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DENNIS CORDRAY whose telephone number is (571)272-8244. The examiner can normally be reached on M - F, 7:30 -4:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Daniels can be reached on 571-272-2450. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dennis Cordray/
Examiner, Art Unit 1741

/Matthew J. Daniels/

Supervisory Patent Examiner, Art Unit 1741